

Exploiting hydration: a new paradigm for biolubrication and drug delivery

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Over the past decade or hydration lubrication has emerged as a leading paradigm to explain biological lubrication, based on hydration shells surrounding ions and zwitterions in aqueous media¹⁻³. Our group has exploited this concept in areas probing the relation of biolubrication to gene regulation and alleviation of osteoarthritis, to drug delivery vehicles with exceptionally long *in vivo* retention times. This talk will describe recent progress in this area.

1. Raviv, U. and Klein, J., 'Fluidity of bound hydration layers' – **Science** **297**, 1540-1543 (2002)
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3. Seror, J., Zhu, L., Goldberg, R., Day, A.J. and Klein J., 'Supramolecular synergy in the boundary lubrication of synovial joints' – **Nature Communications**, | 6:6497 | DOI: 10.1038/ncomms7497 (2015)